



# Community Based Emergency Response Seminar (CBERS) CHEMPACK Overview

Presented by Virginia Department of Health

# Seminar Objectives

By the end of today's Seminar, participants will be able to:

- Describe CHEMPACK Assets
- Describe types of nerve agents
- Recognize signs and symptoms of nerve agent exposure
- Explain the decontamination procedures
- Describe the management of chemical agent attack victims
- Provide an Overview of the VA CHEMPACK Plan
- Demonstrate the steps of using a Nerve Agent Antidote auto-injector (Optional)

# Target Audience

- This seminar is targeted towards:
  - First Responders
  - Dispatchers / PSAPs
  - Hospital / Healthcare
  - Public Health
  - Emergency Management

# Module 1:

## Overview of the CHEMPACK Program



# Module 1 Objectives

- Describe the CHEMPACK Program
- Determine which situations require CHEMPACK assets
- List the agencies involved in CHEMPACK
- Explain the role each agency plays in CHEMPACK

## *Q. Was it a Nerve Agent Incident?*

The accidental poisoning of 35 California farm workers with organophosphate pesticides in 1989.

☐ Yes

☐ No

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*Answer: Yes*

# Q. Was it a Nerve Agent Incident?

Were the 2001 anthrax attacks, where letters containing anthrax spores killed five people and infected numerous others?

☐ Yes

☐ No



For information leading to the arrest and conviction of the individual(s) responsible for the mailing of letters containing anthrax to the New York Post, Tom Brokaw at NBC, Senator Tom Daschle and Senator Patrick Leahy:



**AS A RESULT OF EXPOSURE TO ANTHRAX,  
FIVE (5) PEOPLE HAVE DIED.**

The person responsible for these deaths...

- Likely has a scientific background/work history which may include a specific familiarity with anthrax
- Has a level of comfort in and around the Trenton, NJ area due to present or prior association

Anyone having information, contact **America's Most Wanted** at 1-800-CRIME TV or the FBI via e-mail at [amerithrax@fbi.gov](mailto:amerithrax@fbi.gov)

All information will be held in strict confidence. Reward payment will be made in accordance with the conditions of Postal Service Reward Poster 296, dated February 2000. Source of reward funds: U.S. Postal Service and FBI \$2,000,000; ADVO, Inc. \$500,000.



## *Q. Was it a Nerve Agent Incident?*

Were the 2001 anthrax attacks, where letters containing anthrax spores killed five people and infected numerous others?

*Answer: No*

# What is CHEMPACK Program?

CHEMPACK is a national program under Department of Health & Human Services (HHS) began as an initiative of CDC's Division of Strategic National Stockpile (SNS) in 1983 before oversight and operational control of the SNS and CHEMPACK moved to the Assistant Secretary for Preparedness and Response (ASPR) in early 2018.

# What is the Strategic National Stockpile (SNS)

- Large quantities of medicine & medical supplies
- “Push Package” available for rapid deployment in an emergency
- Managed Inventory (MI)



# SNS Push Packs

*Q. How long does it take for the SNS Push Pack to be delivered?*

- ☐ 4 hours
- ☐ 12 hours
- ☐ 24 hour
- ☐ 36 hours

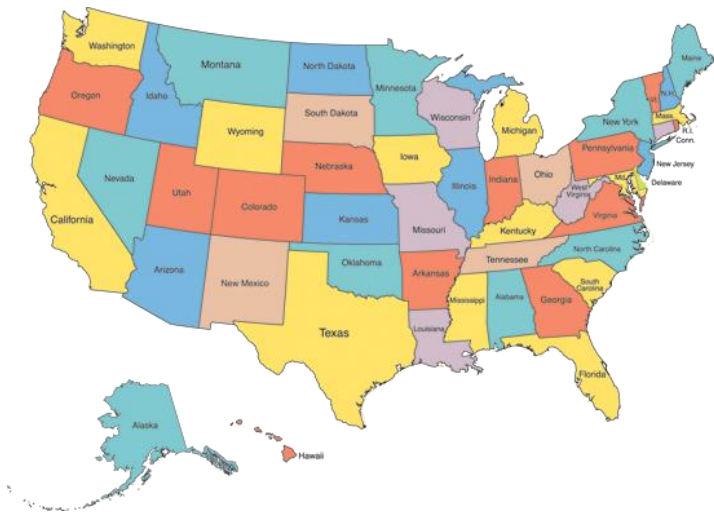


# SNS Push Packs

*A. SNS Push Packs can be sent anywhere in the United States within 12 hours.*



# What is the CHEMPACK Program?



**Pre-position  
nerve agent  
antidotes**



**Increase  
state & local  
capacity**



**Allow rapid  
response to  
nerve agent  
incidents**



# What Exactly is a CHEMPACK Program?

CHEMPACK containers are self-contained units placed in centralized locations to enable first responders to quickly administer life-saving antidotes and save lives.



# CHEMPACK Program Mission

Provide, monitor and maintain a nationwide program for the forward placement of nerve agent antidotes. To provide state and local governments a sustainable resource; and improve their capability to respond quickly to a nerve agent incident.



# Why CHEMPACK ?

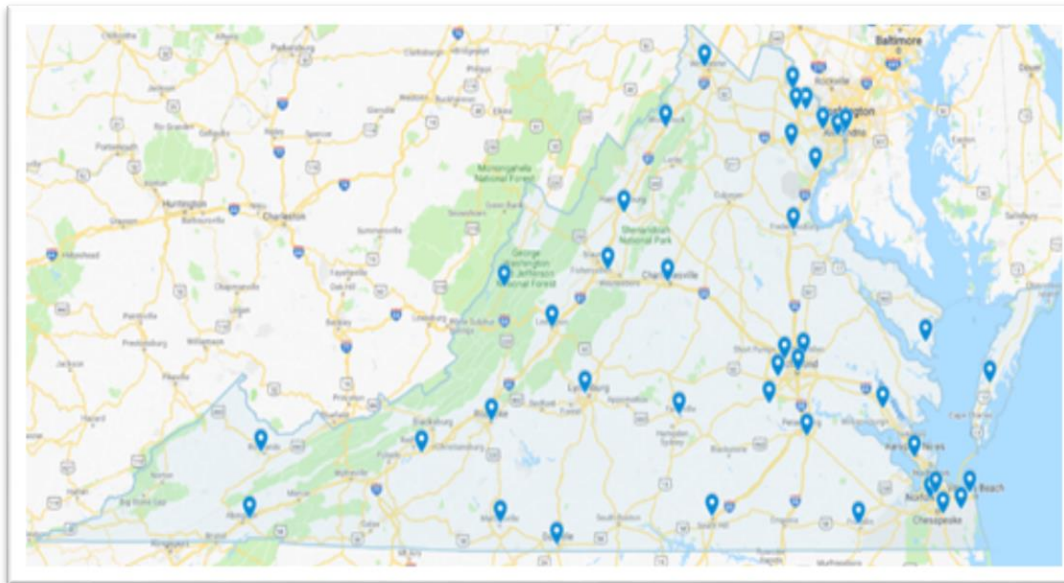
- Strategic National Stockpile (SNS) has a 12-hour response time, too long in the event of a chemical attacks
- State and local governments have limited or no chemical/nerve agent antidote stocks
- Hospitals carry very limited supplies of treatments for nerve agent exposures

# Why CHEMPACK?

- Nerve agent antidotes are costly and have variable shelf lives (not an easily sustainable resource)
- Extended shelf life of SNS-owned assets to save in overall costs
- Federal management of product life cycle to ensure quality of products
- Pre-position containers for faster response times during an emergency
- Local control of critical life-saving assets to ensure assets are dispensed timely

# Virginia Allocations

- 50 containers across the state
- Locations are confidential
- Supplies Maintained
- CHEMPACK are mobile



# CHEMPACK Configurations

- Two different configurations
  - Hospital
  - EMS



# CHEMPACK Configurations cont.

## EMS Containers

- Geared to first responders
- 85% auto injectors
- 454 casualty capacity

## Hospital Containers

- Geared to clinical care environment
- 85% Multi-dose vials
- 1,000 casualty capacity

# Nerve Agent Antidotes

- Three drugs are included in CHEMPACK to reverse the effects of nerve agent exposure:
  - Atropine Sulfate
  - Pralidoxime (2PAM)
  - Diazepam - Treats seizure activity
- Other components:
  - Sterile water for injection
  - Mark-I Nerve Agent Antidote Kits (auto-injectors)



# When are CHEMPACK Needed?

CHEMPACKs should be deployed in the event of a suspected nerve agent incident that will:

- Potentially overwhelm local supplies of antidotes
- Put multiple lives at risk
- Threaten the health of the community



# CHEMPACK

## Management & Oversight

- Assistant Secretary for Preparedness and Response (ASPR)
  - ASPR owns & manages ALL CHEMPACK assets & conducts routine inspections.
- Virginia Department of Health (VDH)
  - VDH oversees receipt, maintenance and monitoring CHEMPACK and serves as a liaison to ASPR.
- Host Facilities
  - The host facilities ensure the proper storage and security of CHEMPACK assets.



# Who's Involved

- Fire
- EMS
- Law Enforcement
- Emergency Management
- Hospitals / Healthcare
- Public Health
- HAZMAT



# Law Enforcement

- Local police are often the first responders on the scene
- State and local police provide on-scene security
- Security at Host Facilities
- Determine if CHEMPACK assets are needed.
- Potentially, transport CHEMPACK assets
- Administer antidotes to affected persons



# Fire Department/EMS/Hazmat

- Fire and EMS can determine if CHEMPACK assets are needed
- Potentially, transport CHEMPACK assets
- Can administer antidotes to affected persons



# Hospitals/Healthcare

- Hospital personnel may need to recognize nerve agent exposure
- Host hospitals prepare CHEMPACK assets for transfer to the field and other hospitals
- Health care providers administer antidotes



# Public Health

- Involved in epidemiologic investigation
- Assist with risk communication, disaster mental health services, and demobilization activities



# Nerve Agent Incidents



**Intentional  
release of a  
nerve agent**



**Agricultural  
accident**

## *Q. Was it a Nerve Agent Incident?*

*The use of mustard gas as a chemical weapon during World War II?*

☐ Yes

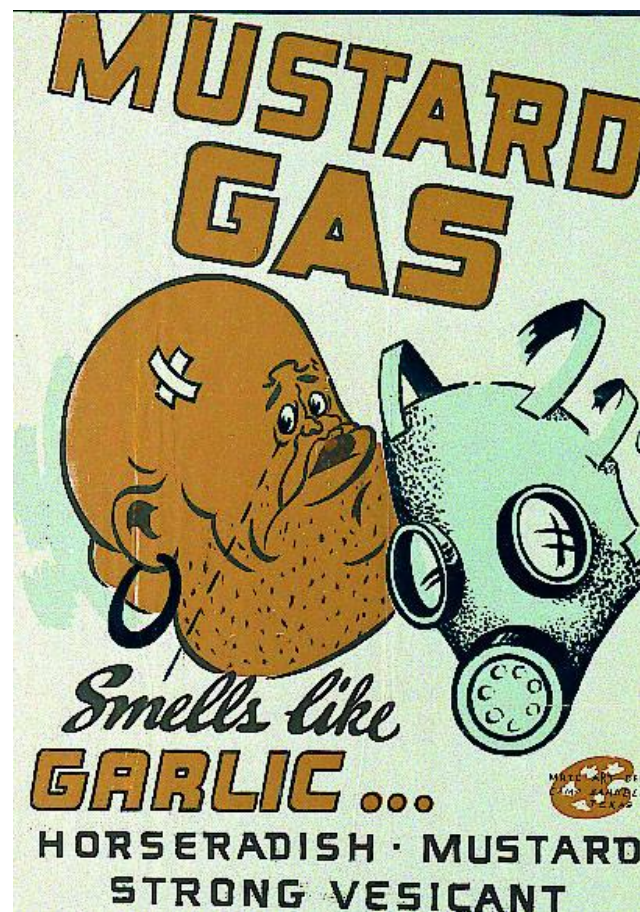
☐ No



# Was it a Nerve Agent Incident?

**Answer: No**

The use of mustard gas as a chemical weapon during World War II was not a nerve agent incident.





## *Q. Was it a Nerve Agent Incident?*

*The intentional release of Sarin gas on a Tokyo subway in 1995, resulting in over 1,000 ill and 12 deaths?*

☐ Yes

☐ No

# Tokyo Subway Sarin Attack

*Answer: Yes*

- Five individuals placed liquid Sarin in packages and boarded the subway system in Tokyo during rush hour.



# *Q. Salisbury, UK Incidents a nerve agent attack?*

- Poisonings in UK in March and June of 2018
  - Fourth generation agent (FGA)/A-series agent/Novichok

☐ Yes

☐ No



# Salisbury, UK Incidents

***Answer: Yes***

- Nerve agent poisonings in UK in March and June of 2018
- FGAs inhibit acetylcholinesterase, as other nerve agents
- High toxicity/potency; similar to VX
- Absorption through skin takes time - symptom onset can be delayed for hours to days

# What are Nerve Agents?

- One of several categories of potentially harmful chemicals
- Can be inhaled, swallowed, or absorbed through the skin
- Attack the nervous system, can result in severe injury or death
- Most nerve agents originally produced in a search for insecticides

# What are Nerve Agents? cont.

- Nerve agents can cause rapid system failure
- Antidotes can reverse symptoms if administered in a timely manner
- CHEMPACK antidotes are packaged to be rapidly administered

# What are Nerve Agents? cont.

- Nerve agents have been used in wars and by terrorists.
- Known to be stored by several nations, including the United States
- Manufactured compounds
- G-type agents are clear, colorless, tasteless liquid miscible in water and most organic solvents.
- VX is a clear, amber-colored, odorless, oily liquid

# Different Nerve Agents



- Chemical Weapons
  - GB (Sarin)
  - GA (Tabun)
  - GD (Soman)
  - GF (Cyclosarin)
  - VX
  - Extremely toxic
  - Most lethal and fast acting
- Organophosphate Pesticides
  - Parathion
  - Malathion
  - Chlorpyrifos
  - Diazinon
  - Commonly used in agricultural practices to kill insects
  - Far less potent than those classified as chemical weapons



# Nerve Agents (Fourth Generation Agents)

- Fourth generation agent (FGA, also known as A-series or Novichok nerve agents)
- FGAs are low volatility nerve agents
  - Highly persistent; pose a significant cross-contamination hazard
  - Do not easily evaporate; unlikely to present vapor hazard
  - Most likely to be encountered as a liquid

*\*No illicit use or manufacture of an FGA or other nerve agent is known to have occurred in the United States, and there is no known threat of any nerve agent use in the United States.*

# What You Need To Know

- Early recognition may be extremely challenging
- The most likely route of exposure:
  - Skin contact
  - Absorbed into the body by mucous membrane (eyes, nose, mouth)
  - Inhalation
  - Ingestion
- FGAs are highly potent
- Avoid any unprotected contact with the agent

# How to Optimize the Response

- Understand the risks
- Early recognition
- Stop exposure
- Treat the injured
  - Supportive care
  - Antidotes
  - Forecast needs



# Conclusion

- Saving lives is key
- Time Matters
- Hazardous chemicals more manageable
- Response to chemical incidents is local
- Patient decontamination is a medical countermeasure
- Federal support: Tools, guidance, best practices to optimize local response systems capabilities

# Module 1: Chempack Review

- ☐ What is the CHEMPACK Program?
- ☐ When are CHEMPACK assets needed?
- ☐ Who is involved in the CHEMPACK Program?